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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

MASINICK, MICHAEL D

ART UNIT	PAPER NUMBER
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2125

DATE MAILED: 11/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/848,999

Applicant(s)

IRVING ET AL.

Examiner

Michael D Masinick

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-13, 20-23 and 34-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-13, 20-23 and 34-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

This action is in response to a request for continued examination filed on Oct. 17th, 2003.

Claims 7-13, 20-23, and 34-37 are pending in this application.

Amendments to the claims have overcome all previous 112 rejections. Those 112 rejections are removed.

In response to applicants arguments that Alfano does not teach “requesting the increase of a plurality of fans if any one of the operating temperatures from a plurality of server processing cards is above a respective predetermined maximum”, examiner further cites U.S. Patent No. 4,817,865 to Wray which more clearly shows the operating of all fans in response to a reading from any of the temperature sensors.

In response to applicants argument that Alfano does not mention the placement of the fans inside the server chassis, examiner maintains the previous rejection. Every personal computer and server computer contains a fan “at least partially disposed” inside the chassis. Alfano clearly states in Col 1, “Fans are standard components in many commercial computers, workstations, notebook and desktop personal computer systems, and in many other electronic and mechanical systems”.

In response to applicants arguments that Alfano does not show wherein at least two of the operating temperatures are equal, examiner maintains this obviousness rejection. Alfano clearly shows the ability to set a predetermined maximum temperature, and while not specifically shown, examiner maintains that a skilled artisan would have found it an obvious variation to set all of the maximum temperatures to be equal.

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In response to applicants arguments that the Peters reference does not show transmitting over a PCI bus, examiner has clearly shown the use of a PCI card in the invention. PCI cards inherently transmit over a PCI bus. This rejection is held as previously stated.

Applicants argument with regards to claim 13 is not persuasive.

Applicants argument with regards to claim 21 is not persuasive.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 7-9, 11, 20, 22, 23, and 34-37 are rejected under 35 U.S.C. 102(b) as being unpatentable over U.S. Patent No. 6,037,732 to Alfano et al in view of U.S. Patent No. 4,817,865 to Wray.

3. Referring to claims 7, 22, and 34, Alfano shows a method for controlling a plurality of server chassis cooling fans comprising: transmitting first and second requests to a first and second server processing cards, respectively, to read first and second operating temperatures, respectively, measured at first and second temperature sensors, respectively; the first and second temperature sensors being coupled with the first and second server processing cards, respectively; receiving the first and second operating temperatures at a central processing unit; comparing the first and second operating temperatures with a first and second predetermined

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maximum operating temperatures, respectively; transmitting a request to a plurality of server chassis cooling fans to increase the speed of the server chassis cooling fans if the operating temperature is greater than or equal to the a predetermined maximum operating temperature (Col 1, lines 37-54) ; and wherein the first and second server processing cards and the plurality of server chassis cooling fans are disposed at least partially within a server chassis.

4. Alfano clearly shows the concept of fan server cards controlling fan systems, and in column 8, lines 60-66, clearly shows the ability to use more than one fan card, fan controller, and multiple fans as the user designing the system would see fit.

5. Applicant asserts that Alfano does not specifically show the ability to control a plurality of fans when either the first or second predetermined temperature reaches a predetermined maximum.

6. Wray shows a ventilation system for a computer or electric system housing where the speed of the fans in all “compartments” is increased if the temperature in any of the compartments is over a predetermined threshold (Col 5, lines 26-39).

7. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the concept of increasing the speed of all fans in response to any single temperate reading being abnormally high because the use of additional ventilation quickens the cooling process and would prevent the noise and annoyance found by workers in the presence of these fans for long periods of time (Wray – Col 1, lines 25-33).

8. Examiner notes that all computer fans and fan control system are well known to be placed inside the casing of the computer or server system.

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9. Referring to claim 8, the same rejections apply as it is well known in the art the be able to add as many server processing cards as required and claim 8 brings in no new material other than number of cards and fans.

10. Referring to claim 11, 23, and 35, Alfano shows receiving, at the controller, the operating temperature from a sensor chip ("Temperature sensing circuit", column 2, line 38).

11. Referring to claims 20 and 36, see Wray rejection as shown above.

12. Referring to claim 9 and 37, Wray shows where at least two of the first, second and third predetermined maximum operating temperatures are equal. Examiner notes that a skilled artisan would have found it an obvious variation to set all of the maximum temperatures to be equal.

13. Claims 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,037,732 to Alfano et al in view of Wray as shown above and further in view of U.S. Patent No. 6,470,289 to Peters.

14. Alfano in view of Wray does not specifically shows transmitting over a PCI bus or an I2C bus.

15. Referring to claim 10, Peters shows wherein the first request is transmitted over a PCI bus (Col 7, lines 27-30).

16. Referring to claim 12, Peters shows wherein the operating temperature is received at the controller over an I2C bus (Col 10, lines 61-63).

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17. It would have been obvious to one of ordinary skill at the time the invention was made to transmit over either of these bus systems because they are well known in the art to be the bus systems used with server processing cards.

18. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over by U.S. Patent No. 6,037,732 to Alfano et al in view of Wray as shown above and further in view of U.S. Patent No. 6,065,081 to Stancil et al.

19. Alfano as shown above does not show where the second request comprises a GPIO signal.

20. The use of General Purpose Input/Output signals is well known in the art for their ability to be quickly analyzed and used. Stancil et al shows the use of GPIO signals over a PCI bus for the purpose of passing password data over the bus.

21. It would have been obvious to one of ordinary skill in the art to use the GPIO signals of Stancil to move the PCI bus signals of Peters in view of Alfano because they are quickly analyzed and would be well suited for closed loop control.

22. Claims 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No 6,037,732 to Alfano et al in view of Wray as shown above and further in view of U.S. Patent No 6,101,459 to Tavallaei et al.

23. Alfano as shown above does not show where the plurality of server processing cards outnumber the plurality of cooling fans.

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24. Tavallaei shows a system of fan based cooling and control where a fan control card is used in a PCI slot containing 4 fan output modes (Figure 1). This is done for purposes of expansion and would allow the users to simply add fans at a later point should they become needed.

25. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the expansion capability of Tavallaei in the fan cooling system of Alfano because the ability to expand without changing hardware in the future is important to the cost structure of a cooling system.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael D Masinick whose telephone number is (703) 305-7738. The examiner can normally be reached on Mon-Fri, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached on (703) 308-0538. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7239 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

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mdm

November 5, 2003

A handwritten signature in black ink, appearing to read "L. Picard", with a stylized flourish at the end.

LEO PICARD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100